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Plantation Timber on the Island of Oahu--1966

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and

Division of Forestry, Department of Land and Natural Resources, State of Hawaii, Honolulu, Hawaii 96813

Nelson, Robert E.; Wong, Wesley H.C., Jr.; and Wick, Herbert L. 1968. *Plantation timber on the Island of Oahu--1966.* Berkeley, Calif., Pacific SW. Forest & Range Exp. Sta. 52 pp., illus. (U.S. Forest Serv. Res. Bull. PSW-10)

This report summarizes the results of an inventory of timber in planted forests on the Island of Oahu. It provides information on (1) location and acreage of each planted stand, (2) species composition and age, (3) timber volume and quality, and (4) ownership. This information supplements that of the initial Forest Survey.

OXFORD: (969):228.7--05.

RETRIEVAL TERMS: Planted forests; surveys; stand composition; stand volume; forest ownership; Hawaii (Oahu).

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Robert E. Nelson Wesley H.C. Wong, Jr. Herbert L. Wick

Contents

The Authors

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Foreword

This report is one of a series about planted forests on major islands in the State of Hawaii. Reports have been published for the islands of Hawaii (1966), Kauai (1967), Lanai (1967), and Molokai (1968). Summarized here are the results of a survey of timber in planted forests on the Island of Oahu. This inventory supplements the initial Forest Survey of the State completed in 1963. That survey indicated the importance of planted forests as a timber resource, but provided no details. This bulletin reports: (a) location and acreage of each planted stand, (b) species composition and age of stand, (c) timber volume and quality, and (d) ownership of planted timber.

The study is a cooperative undertaking of the Division of Forestry, Hawaii Department of Land and Natural Resources, and the Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture. It was conducted under the direction of Robert E. Nelson, Director, Institute of Pacific Islands Forestry, Pacific Southwest Forest and Range Experiment Station. Nobuo Honda, forester, Hawaii Division of Forestry, helped develop plans for the plantation inventory and supervised the field work.

In 1966, responsibility for supervision of the Forest Survey in the Pacific Coast States and Hawaii was shifted to the Pacific Northwest Forest and Range Experiment Station, Portland, Oregon, but field work in Hawaii will continue to be a joint effort of the Hawaii Division of Forestry and the Pacific Southwest Station.

Many individuals aided in various phases of the survey. Special acknowledgment is due to the field crew: Forester, Wesley H. C. Wong of the Hawaii Division of Forestry and Forestry Research Technician Kaipo Roberts of the U.S. Forest Service.

E. M. Hornibrook, formerly in charge of the Forest Survey, Pacific Southwest Station, and Russell K. LeBarron, former Forest Ecologist, Hawaii Division of Forestry, aided in developing plans for the study.

Robert M. Miller, Systems Analyst, Pacific Southwest Station, developed specifications for processing data by electronic computers. The Computing Center at the University of Hawaii processed the data.

Tom K. Tagawa, Hawaii State Forester, the late Max F. Landgraf, former State Forester, Albert J. MacDonald, District Forester (retired), and Forest Rangers Teruo Yoshioka and George Nozawa provided generous cooperation in the conduct of the survey.

U.S. Forest Service research in Hawaii is conducted in cooperation with the Division of Forestry, Hawaii Department of Lands and Natural Resources.

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Oahu ranks third in size (604 square miles) but first in population (650,000) among the islands of Hawaii. About 8 of every 10 persons in the State live here--chiefly in the metropolitan Honolulu-Waikiki-Pearl Harbor complex. Centered on Oahu are Hawaii's chief business, military, and tourist activities. Next in importance to these three activities comes agriculture --the island produces 60 percent of pineapples, 48 percent of the diversified crops and livestock products, and 19 percent of the sugar in the State.[1]

Formed by volcanic action, much of Oahu is marked by steep rugged topography. On the westerly side of the island, Mount Kaala in the Waianae Range rises to 4,025 feet. To the east, several mountains in the long narrow Koolau Range rise above 2,700 feet--one to 3,150 feet.

There are also large areas of level or gently sloping lands, especially the expansive Wahiawa plain which separates the Waianae and Koolau ranges. A narrow, irregular and interrupted coastal plain almost completely skirts the island.

In this island setting, economic and social activities depend on the kind and extent of natural resources. These activities in turn have a marked impact on natural resources. And in this setting, forest lands are becoming increasingly important because of their multiple values.

More than half--55 percent--of Oahu is forested.[2] Of the 211,000 acres, 97,000 acres are commercial forest land holding about 52 million board feet of sawtimber (figs. 1,2), and about 114,000 acres are noncommercial forest land. In addition, the island has about 10,000 acres of nonforest rockland and pali in the Waianae and Koolau ranges. Land in Forest and Water Reserve status amounts to 123,000 acres, mostly rugged and mountainous. The Reserves are public and private lands administered by the State for the management and protection of watershed and other forest values.

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[1]Bank of Hawaii. *Economy of Hawaii, 1967*. Annual Economic Report, August 1967. 47 pp., illus.

[2]Nelson, Robert E., and Wheeler, Philip R. *Forest Resources of Hawaii--1961*. Forestry Div., Dep. Land and Natur. Resources, State of Hawaii, in cooperation with Pacific SW. Forest & Range Exp. Sta., Forest Serv., U.S. Dep. Agr., 48 pp., illus. 1963.

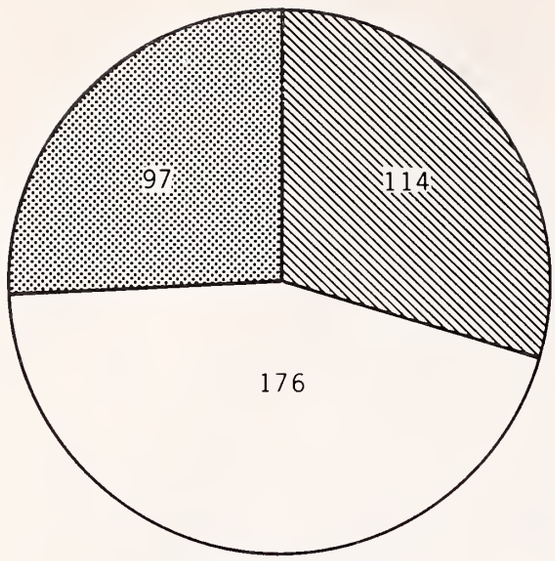

Figure 1.--*Forest and nonforest land acreages on the Island of Oahu, Hawaii, 1961. (Adjusted to 1967 total land area figure.)*

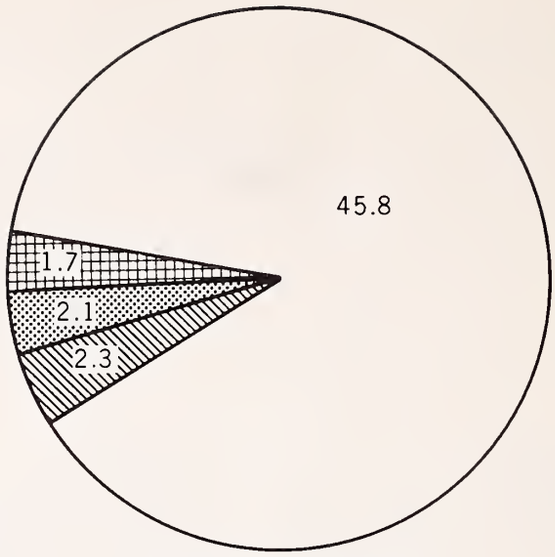

Figure 2.--*Sawtimber volumes on the Island of Oahu. (The figure for planted timber is based on 1966 data; other figures are from 1961 data.)*

Most of the forest acreage is native or naturalized types, with little volume of sawtimber. Noncommercial forest or brush types occupy nearly 80,000 acres of the commercial forest land. In the first Forest Survey of Hawaii, only about 12,000 acres of the ohia (*Metrosideros collina*), koa (*Acacia koa*),[3] and naturalized silk-oak (*Grevillea robusta*) or other naturalized types were considered commercial types.[4] Sawtimber stocking in these stands averages only about 500 board feet per acre, for a total of about 6 million board feet.

Forest plantings were started on Oahu in the late 1800's to develop a supply of fuelwood, fenceposts, and other products, and to enhance watershed conditions.[5,6] Reforestation efforts of the Territorial Division of Forestry to revegetate watersheds were greatly expanded during the late 1930's with the aid of the Civilian Conservation Corps.

The planted forests on Oahu--even though small in acreage--now hold several times more volume of sawtimber than do the native forests. They yield more timber than the native stands and the timber is generally of better quality. The plantation vol-

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[3]A small acreage of planted koa forest is included in the over-all acreage of native forest type because of the difficulty of differentiation. Generally, these planted koa forests have not developed into sawtimber stands.

[4]Nelson and Wheeler, op. cit.

[5]Lubker, F. *The wattle trees.* The Planters' Monthly (Hawaii) 6(9): 229-230. 1886.

[6]Walker, Thomas R. *Report of committee on forestry.* The Planters' Monthly (Hawaii) 6(11): 531-533. 1887.

ume totals only about 46 million board feet, but has potential for industrial use. Most of the volume is accessible.

In 1966, we started a stand-by-stand inventory of plantation timber to obtain detailed information on acreage, volume and quality of timber, and ownership. This report summarizes data compiled for each stand.

Forest Plantation Resources

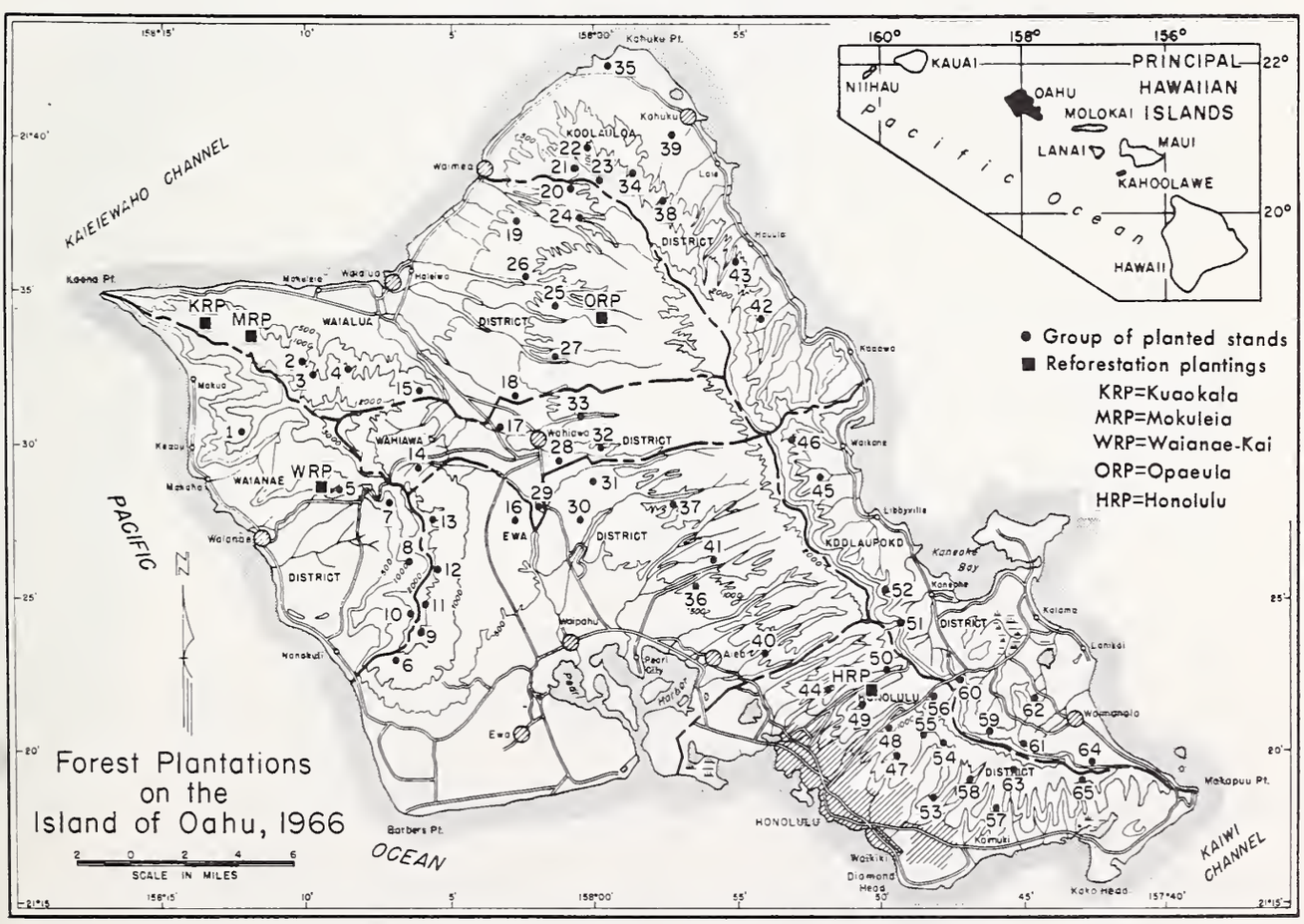
Forest plantations on Oahu total nearly 7,000 acres. They are distributed mainly on the lower slopes around the Waianae and Koolau ranges, above the cultivated and urban areas (see map and tables 12,13). Most of the plantations are concentrated in the Forest Reserves on the easterly slopes of the Waianae range, in the lower reaches of the Kaukonahua watershed, and in the important watershed above Honolulu.

Area

Commercial forest plantations[7] total nearly 4,840 acres in stands from 2 to 171 acres in size (tables 1-4, 12; fig. 3).

Most of the individual plantation stands tallied are of small acreage. Only 15 commercial stands were 50 acres or larger for

[7]See definitions of terms in appendix.



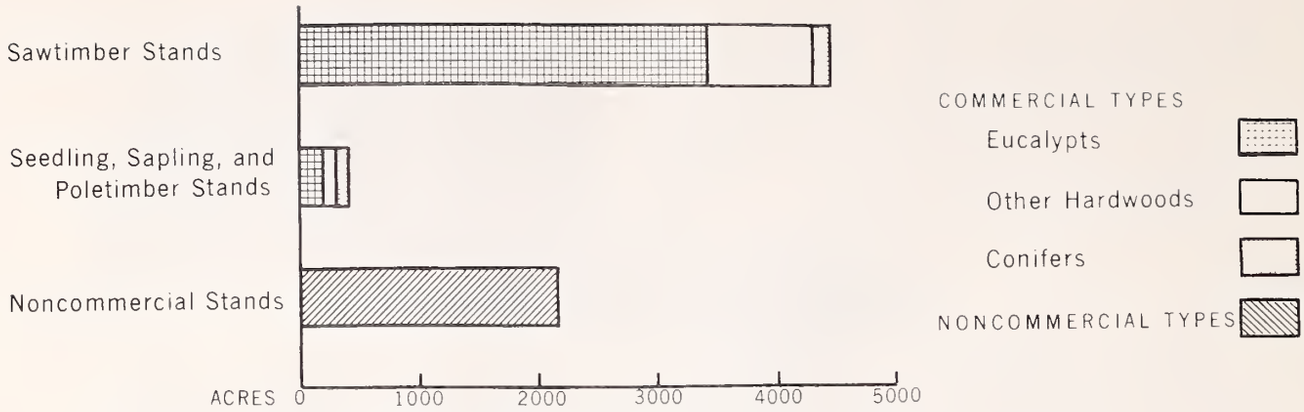


Figure 3.--*Acreage of commercial and noncommercial plantations stands, by stand-size class and forest type, Oahu 1966.*

a total of nearly 1,100 acres. Stands 5 to 49 acres in size aggregate about 2,700 acres. There are 391 stands from 2 to 4 acres in size, totaling some 1,040 acres.

About 4,440 acres of the commercial forest plantations are sawtimber stands. Another 400 acres are recently planted seedling, sapling, and poletimber stands of commercial species.

Of the sawtimber stands, eucalypts--mainly *Eucalyptus robusta* --make up 76 percent, or about 3,400 acres. Other hardwood sawtimber stands total about 900 acres. And there are about 140 acres of commercial conifer sawtimber stands.

Commercial hardwood types account for about 340 acres of the recently planted seedling, sapling and poletimber stands. Another 60 acres are commercial conifer types.

In addition to the commercial forest plantations, there are about 2,140 acres of noncommercial types, mostly paper-bark and ironwood.

Timber Volume

Planted forests on Oahu contain nearly 46 million board feet of sawtimber (tables 5-10). Of this volume about 36 million board feet are in stands 5 acres and larger, and 10 million board feet are in stands of 2 to 4 acres. Most of the sawtimber --39.8 million board feet--is eucalyptus; robusta eucalyptus sawtimber alone amounts to 19.6 million board feet. The volume in hardwoods other than eucalypts totals about 3.5 million board feet. There are 2.5 million board feet of commercial conifer sawtimber, all Norfolk-Island-pine.

In the stands 5 acres and larger, about 37 percent of the sawtimber volume is in trees 19 to 29 inches d.b.h. (table 8). Some 60 percent of the total volume is in trees smaller than 19 inches, and about 3 percent is in trees 29 inches d.b.h. (diameter at breast height) and larger.

In terms of growing stock, the volume in planted sawtimber stands amounts to about 10.9 million cubic feet (tables 7,8). About 78 percent, or some 8.5 million cubic feet of this volume is in eucalypts; robusta eucalyptus alone total some 4.6 mil-

lion cubic feet. Other hardwoods amount to 1.9 million cubic feet, and conifers, about 0.5 million cubic feet.

There is additional volume of growing stock in the poletimber and sapling and seedling stands, but they were not measured.

Wood in cull trees in planted sawtimber stands 5 acres and larger totals about 640,000 cubic feet (table 9). The 2,140 acres of noncommercial plantations hold an additional, much greater volume of wood in cull trees, but these stands were not measured.

Ownership

Most of the forest plantations on Oahu are privately owned (tables 2, 3, 11). Of the nearly 7,000 acres tallied, including noncommercial types, private owners hold nearly 4,000 acres or 57 percent. The State owns about 1,900 acres or 27 percent. Other publically-owned forest plantations, including military reservations total about 1,100 acres or 16 percent. Most of the plantations are in the Forest Reserves (table 2).

The State owns 45 percent of the sawtimber or about 20.8 million board feet. Private ownership totals 42 percent, or 19.2 million board feet (figs. 4,5). Other public agencies own the balance of about 5.8 million board feet.

Age of Stands

Only about 300 acres of the commercial plantation timber stands are more than 40 years old (table 4). More than 75 percent of the stands (4,320 acres) were planted from 1926 to 1945. Much of this acreage was planted between 1935 and 1941 by the Civilian Conservation Corps. Only 86 acres were planted between 1946 and 1955. Since 1956, less than 135 acres have been planted.

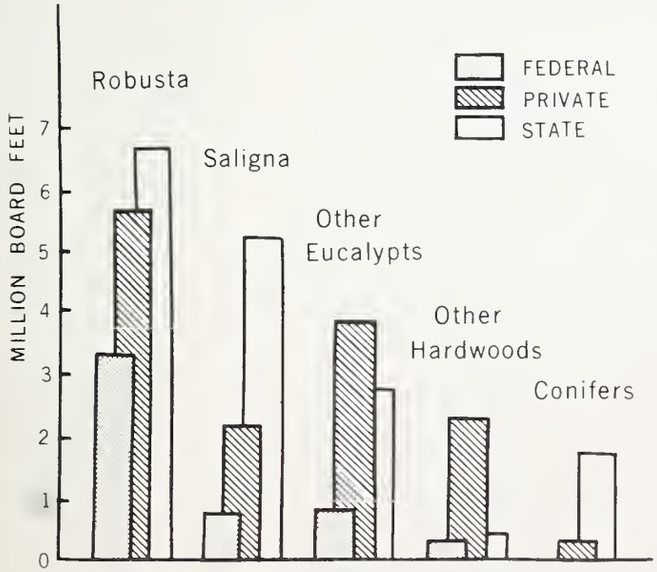


Figure 4.--*Sawtimber volume in planted stands greater than 5 acres in size, by species group and ownership class, Oahu 1966.*

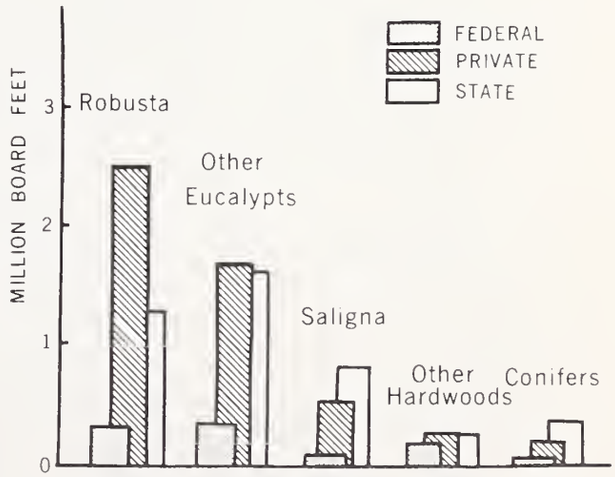


Figure 5.--*Sawtimber volume in planted stands less than 5 acres in size, by species group and ownership class, Oahu 1966.*

Stand Yields

Sawtimber in the planted sawtimber stands averages about 9,400 board feet per acre. But yields differ greatly with stand age, species, site, history and condition of stand, and other factors. The highest stand net volume measured averaged 57,600 board feet per acre in a 40-year-old robusta eucalyptus stand. The next highest yield was in a stand of saligna eucalyptus that averaged 47,700 board feet per acre.

Timber Quality

Saligna eucalyptus sawtimber excells other species in quality, as judged by the proportion of volume in grades 1 and 2 factory lumber logs: 19 percent of it is in grade 1, and 15 percent in grade 2 logs (table 10). Robusta eucalyptus, the hardwood species in greatest volume, has 13 percent of its volume in grade 1 logs and 8 percent in grade 2 logs. Conifer species were not log-graded.

Opportunity for Industrial Development

Planted forests offer much better prospects for industrial development than do native forests. Most of the native or naturalized forests are of particularly poor quality--often just brush. These poorly stocked or nonstocked forests occupying commercial forest lands contain only small amounts of merchantable timber. Only 12,000 of the 90,000 acres of native or naturalized forest types are considered merchantable timber types. And these forests hold only about 6 million board feet of sawtimber.

Harvesting of wood for small amounts of fence posts, fuelwood, and miscellaneous products from native forests will probably continue, but practically none of the native stands offer prospects for sawtimber.

In contrast to the native forests, planted stands have grown rapidly and now yield higher per-acre volumes of timber. In the 4,440 acres of commercial planted forests of sawtimber size, the volume totals about 46 million board feet of sawtimber. Most of the forestation that produced this new timber resource was not done to grow sawtimber, but to control erosion, improve watershed cover, and provide fuelwood. Therefore, species planted were not necessarily selected on the basis of wood quality, but on the basis of adaptability and rapid growth. *Eucalyptus robusta*--a sawtimber species--was highly favored. But so were several species that now offer little or no potential for sawtimber, such as ironwoods (*Casuarina* spp.) and paper-bark (*Melaleuca leucadendron*).

Some of these early plantings demonstrate that timber production potentials are far greater than might be inferred from the data on present total sawtimber volumes on this Island. We know that many valuable introduced timber species are adapted

to the different forest sites. An average annual sawtimber growth rate of 1,000 board feet per acre can be expected from managed, well-stocked forests on good sites. And stands can be harvested within 30 to 50 years after establishment.

Although its potential would be limited, a small sawmilling industry could be based on Oahu's present timber resource. It would depend on the development of markets for the small volumes of specialized products for which the timber is useful. And it could operate only on a small scale or for a very few years.

There is, however, a potential to develop a much larger timber resource, which could serve as a base for a significant local milling industry. If only 20 percent of the 97,000 acres of presently little-used and unmanaged commercial forest land were planted to introduced species and managed, timber production could amount to about 15 million board feet annually in 30 years. This production is significant in relation to the present imports of wood amounting to some 100 million feet annually.

Recent forestation by the State are in part an attempt to capitalize on this potential. In selecting species, foresters are considering wood qualities and adaptability to specific sites. They are planting on nonstocked lands or lands where forests are of particularly poor quality. Reforestation efforts should be greatly expanded to bring a much greater forest area under management. The amount of reforestation accomplished during the next 10 years will determine in large part the amount of timber that might be available 30 to 40 years from now as a base for a local forest products industry.

Multiple Values of Forest

Forests provide many values besides timber. On Oahu their value for watershed protection and for recreation use far exceeds their value for timber. Plantations established primarily for watershed protection and erosion control have greatly improved the landscape and increased opportunities for forest recreation. Planted forests of introduced trees now provide the most attractive and heavily used forest recreation sites on the Island. They also can provide improved wildlife habitat. They can be used to produce Christmas trees in much greater numbers for local use or export. Norfolk-Island-pine grows well and is a readily marketable Christmas tree.

These multiple benefits of planted forests accrue continuously year after year. In addition, periodic harvests of timber can be made without detracting from and often enhancing the recreation and watershed values.

Because vast acreages of mountain lands on Oahu must be maintained in forest cover, both public and private land managers should try to develop all the potential benefits latent in these lands. It has been amply demonstrated on a small scale in the existing plantations that reforestation can enhance recreation use, watershed values, timber production, and wildlife habitat.

Stands of robusta eucalyptus and palm trees in upper Manoa Valley show the typical nature and beauty of a planted forest.

Species of eucalypts are being tested for suitability to Hawaiian sites in this experimental forest established in 1913 in Nuuanu Valley by the Hawaii Division of Forestry.

Monkey-pod trees, one of the lesser species in Hawaii, are a source of valuable craftwood.

Norfolk-Island-pine can be produced in much greater numbers on Oahu's forest lands, for local consumption and for export as Christmas trees.

Planted forests of introduced trees provide an attractive setting for recreation on Oahu.

Appendix

Definitions

Commercial and Noncommercial

Forest land: Land at least 10 percent stocked by forest trees of any size, or formerly having such tree cover and not currently developed for other use; and land supporting shrubs, the crowns covering more than 50 percent of the ground.

> *Commercial forest land:* Forest land that is producing or can produce crops of industrial wood (usually sawtimber) and is not withdrawn from timber use.
>
> *Noncommercial forest land:* (a) *Productive-reserved* forest land withdrawn from timber use through statute or administrative regulation, and (b) *unproductive* forest land incapable of yielding crops of industrial wood because of adverse site conditions.

Forest plantation: Planted forests in which at least 10 percent of the growing space is occupied by planted trees (introduced species in this report), regardless of native species predominance.

> *Commercial forest plantation:* A plantation of commercial tree species on commercial forest land.
>
> *Noncommercial forest plantation:* A plantation of noncommercial tree species or of commercial tree species planted on noncommercial forest land.

Commercial tree species: Tree species suitable for industrial wood products. Species suited only for fuelwood or fence posts are excluded. The following were tallied on plots:

Scientific Name	*Common Name*
Acacia koa	koa
Albizia falcata (A. moluccana)	Molucca albizzia
Angophora lanceolata	lanceleaf gum-myrtle
Araucaria excelsa	Norfolk-Island-pine
Cinnamomum camphora	camphor-tree
Eucalyptus calophylla	marri
Eucalyptus citriodora	lemon-gum eucalyptus
Eucalyptus gummifera	bloodwood eucalyptus
Eucalyptus microcorys	tallowwood eucalyptus
Eucalyptus paniculata	gray ironbark eucalyptus
Eucalyptus pilularis	blackbutt eucalyptus
Eucalyptus resinifera	kinogum eucalyptus

Scientific Name	*Common Name*
Eucalyptus robusta	robusta eucalyptus
Eucalyptus saligna	saligna eucalyptus
Eucalyptus sideroxylon	red-ironbark eucalyptus
Eucalyptus spp.	unidentified eucalyptus
Fraxinus uhdei	tropical ash
Grevillea robusta	silk-oak
Mangifera indica	mango
Metrosideros collina (M. polymorpha)	ohia
Pithecellobium saman	monkey-pod
Syncarpia glomulifera (S. laurifolia)	turpentine-tree
Terminalia myriocarpa	jhalna
Tristania conferta	brushbox

Other frequently planted commercial tree species not tallied in plots:

Scientific Name	*Common Name*
Agathis robusta	Australian kauri
Cryptomeria japonica	sugi
Eucalyptus cornuta	yate
Eucalyptus spp.	unidentified eucalyptus
Swietenia mahagoni	West Indies mahogany
Toona ciliata var. *australis*	Australian toon

Noncommercial tree species: Tree species not now considered suitable for industrial products. The following were tallied on plots:

Scientific Name	*Common Name*
Acacia decurrens	black-wattle acacia
Aleurites moluccana	kukui (candlenut-tree)
Casuarina spp.	ironwoods
Cinnamomum zeylanicum	cinnamon
Cupressus macrocarpa	Monterey cypress
Cupressus spp.	cypress
Diospyros sandwicensis	lama
Erythrina sandwicensis	wiliwili
Eucalyptus globulus	bluegum eucalyptus
Eucalyptus spp.	unidentified eucalyptus
Eugenia cumini	Java-plum
Melaleuca leudadendron	paper-bark
Melia azedarach	pride-of-India
Melochia indica	melochia
Pisonia inermis	papala-kepau
Pithecellobium dulce	opiuma

Scientific Name	*Common Name*
Pritchardia spp.	loulu palm
Santalum spp.	sandalwood
Straussia spp.	kopiko

Other oft-planted noncommercial tree species not tallied on plots:

Scientific Name	*Common Name*
Acacia confusa	Formosa koa
Ficus sp.	fig
Haematoxylon campechianum	logwood
Jacaranda mimosifolia	jacaranda
Platymiscium stipulare	roble

Hardwoods: Dicotyledonous trees; usually broadleaved.

Conifers: Coniferous trees; usually evergreen, having needle or scale-like leaves. Also generally known as softwoods.

Forest types or species type: Forests which are predominantly of a single species and in which no other species makes up 25 percent or more of the stand, are designated by the single species such as robusta eucalyptus type, ohia type, or tropical ash type. Otherwise they are designated:

Mixed eucalyptus type: Planted stands predominantly of eucalyptus species.

Mixed hardwood type: Planted stands predominantly of hardwoods other than the eucalypts.

Mixed conifer type: Planted forests predominantly of conifers.

Class of Timber

Growing stock: Live trees of good form and vigor and of species suited for industrial wood (commercial species).

Sawtimber trees: Live trees of commercial species of at least 11.0 inches diameter breast height which contain a butt half-log or a log which meets the specifications of standard lumber, or tie and timber log grades.

Poletimber trees: Live trees of commercial species between 5.0 and 10.9 inches d.b.h., having soundness and form necessary to develop into sawtimber trees.

Saplings and seedlings: Live trees of commercial species between 1.0 and 4.9 inches d.b.h. and less than 1 inch, respectively, which show promise of becoming sawtimber trees.

Sound cull trees: Live trees 1 inch d.b.h. or larger which do not qualify as growing stock because of species (noncommercial species), poor form, or excessive limbs.

Rotten cull trees: Live trees 1 inch d.b.h. or larger which are not growing stock or sound cull because of excessive rot.

Sawtimber: Wood in trees defined as sawtimber trees.

Volume

International 1/4-inch kerf log rule: A formula rule for estimating the board-foot volume of logs, by 4-foot log sections, V equals $0.905\ (0.22D^2 - 0.71D)$.

Sawtimber volume: The net volume of the saw-log portion of sawtimber trees, in board feet, International 1/4-inch rule.

Saw-log portion: That part of the main bole of sawtimber trees between the stump and the merchantable top.

Merchantable top: The point on the bole above which a merchantable sawlog cannot be obtained; i.e., the point where the main stem divides into limbs or is less than 8 inches diameter inside bark.

Growing stock volume: Volume in cubic feet of sound wood in the bole of sawtimber and poletimber trees from stump to a minimum top diameter inside bark (d.i.b.) of 4.0 inches, or to the point where the main stem divides into limbs.

All timber volume: Volume in cubic feet of sound wood in the bole of growing stock and cull trees 5.0 inches d.b.h. or larger, from stump to a minimum top diameter inside bark (d.i.b.) of 4.0 inches.

Stand-Size Classes

Sawtimber stands: Stands at least 10 percent stocked with growing stock trees, half or more in sawtimber and poletimber trees, and sawtimber stocking at least equal to poletimber.

Poletimber stands: Stands failing to qualify as sawtimber but at least 10 percent stocked with growing-stock trees, at least half poletimber.

Sapling and seedling stands: Stands not qualifying as sawtimber or poletimber, but at least 10 percent stocked with growing-stock trees.

Nonstocked: Commercial forest lands less than 10 percent stocked with growing-stock trees.

Miscellaneous

Diameter breast height (d.b.h.): Tree diameter in inches, outside bark, measured at 4-1/2 feet above the ground for normal trees, and 18 inches above the stilt or swell for abnormal trees.

Industrial wood: Commercial roundwood products, such as sawlogs, veneer logs, and pulpwood. Fuelwood and fence posts are excluded.

Log grades: A classification of logs based on external characteristics as indicators of quality or value of lumber the logs will yield. Grade 1 is the highest quality, grade 2 intermediate, and grade 3 the lowest quality of standard hardwood factory lumber logs.[8] Grade 4 logs are suitable for ties and timbers.

Timber quality: Based on log grades unless stated otherwise. Characteristics of wood such as density, strength, color, and shrinkage, are also measures of quality. However, these are usually inherent in a species.

Inventory Procedure

Area and volume statistics presented in this report were developed plantation stand-by-plantation stand. First, individual forest plantations of 2 acres or more were identified and delineated on aerial photographs through stereoscopic study. Each plantation was given a stand number and classified as to type and stand-size group. The area of each plantation was measured from the photograph. Ownership and stand age were determined from maps and other records. Field examination of each plantation allowed for correcting delineations, classifications, and acreages.

Next, timber-volume plots were located on the ground in each commercial forest plantation of 5 acres and larger having sawtimber trees. The sample plot locations were selected at random from a grid of points overlaid on the aerial photograph. Two or more sample locations, depending on stand acreage and

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[8] U.S. Forest Products Laboratory. *Hardwood log grades for standard lumber--proposals and results.* U.S. Forest Serv. Forest Prod. Lab. Rep. 1737, 15 pp., illus. 1953.

variability, were selected in each stand. At each location, tree measurements were made from which timber volume and quality could be computed and expanded. Detailed measurements were made on a "main" plot at each location, supplemented by additional but less detailed data on two "satellite" plots. All plots were variable plots with a basal area factor of 20.

Finally, the data were processed through a specially prepared computer program. Tree measurements were converted to meaningful volume units on a per-acre basis, averaged for the plots in a stand, and expanded for the acreage of the stand. The computer output consisted of tabular data for each stand and summaries of stand data by forest reserves.

Volumetric data for stands 2 to 4 acres in size were extrapolated from closely similar measured stands.

The accuracy goal for this inventory was ± 20 percent per 5 million net board feet of sawtimber in a stand, at the level of one standard error. The reliability of estimates for each forest reserve, based on measured stands only, are shown below. Two chances out of three the estimated volume does not vary from the actual by greater than the sampling error indicated.

	Total volume (thousand bd. ft.)	Sampling error (percent)
Forest Reserve:		
Ewa	12,641	7.8
Hauula	185	23.2
Honolulu	4,301	7.6
Honouliuli	6,270	10.1
Kahuku	350	11.9
Kaneohe	164	35.9
Kawailoa	326	23.2
Mokuleia	403	7.4
Nanakuli	149	38.7
Pupukea	1,194	47.4
Waiahole	967	33.1
Waianae-kai	1,032	36.0
Waimanalo	149	12.0
Outside Forest Reserve	7,489	10.4

Table 1.--Area of forest plantations for all ownerships by forest type and forest reserve, Island of Oahu, 1966

Forest reserve	Commercial forest types			Total commercial types	Total noncommercial types	Total all types
	Eucalypts[1/]	Other hardwoods	Conifers[2/]			
	Acres					
Ewa	892	9	3	904	265	1,169
Hauula	13	--	28	41	34	75
Honolulu	325	65	32	422	412	834
Honouliuli	758	819	4	1,581	142	1,723
Kahuku	21	--	31	52	173	225
Kaneohe	15	--	--	15	8	23
Kawailoa	71	16	10	97	38	135
Kuliouou	--	--	--	--	4	4
Makua-Keaau	3	21	--	24	--	24
Mokuleia	55	9	46	110	--	110
Nanakuli	14	38	--	52	2	54
Pupukea	121	--	--	121	93	214
Schofield Barracks	3	10	--	13	75	88
Waiahole	34	7	35	76	8	84
Waianae-Kai	85	--	--	85	23	108
Waimanalo	95	7	--	102	13	115
Outside Reserve	1,110	24	6	1,140	849	1,989
Total	3,615	1,025	195	4,835	2,139	6,974

1/ Includes turpentine-tree, brushbox, lanceleaf gum-myrtle.
2/ Mainly Norfolk-Island-pine but includes some sugi and Australian kauri.

Table 2.--Area of forest plantations by ownership class,[1/] forest type, and forest reserve, Island of Oahu, 1966

Ownership and forest reserve	Commercial forest type			Total commercial types	Total non-commercial types	Total all types
	Eucalypts[2/]	Other hardwoods	Conifers			
	Acres					
State:						
Ewa	479	9	--	488	30	518
Hauula	6	--	28	34	34	68
Honolulu	249	51	32	332	211	543
Kaneohe	12	--	--	12	--	12
Kuliouou	--	--	--	--	4	4
Makua-Keaau	3	21	--	24	--	24
Mokuleia	55	9	46	110	--	110
Nanakuli	14	38	--	52	2	54
Pupukea	118	--	--	118	93	211
Waiahole	32	--	35	67	8	75
Waianae-Kai	85	--	--	85	23	108
Waimanalo	69	7	--	76	2	78
Outside Reserve	49	--	--	49	27	76
Total	1,171	135	141	1,447	434	1,881
Other Public:						
Ewa	189	--	--	189	84	273
Honolulu	53	12	--	65	201	266
Schofield Barracks	3	10	--	13	75	88
Outside Reserve	405	18	4	427	85	512
Total	650	40	4	694	445	1,139
Private:						
Ewa	224	--	3	227	151	378
Hauula	7	--	--	7	--	7
Honolulu	23	2	--	25	--	25
Honouliuli	758	819	4	1,581	142	1,723
Kahuku	21	--	31	52	173	225
Kaneohe	3	--	--	3	8	11
Kawailoa	71	16	10	97	38	135
Pupukea	3	--	--	3	--	3
Waiahole	2	7	--	9	--	9
Waimanalo	26	--	--	26	11	37
Outside Reserve	656	6	2	664	737	1,401
Total	1,794	850	50	2,694	1,260	3,954
Island total	3,615	1,025	195	4,835	2,139	6,974

[1/] Ownership of plantation stands is based on interpretation of locations on Tax-Key maps and topographic maps which are often inadequate for precise determinations. Therefore, for a given plantation stand, the ownership designation may be in error, although over-all ownership statistics are probably not greatly affected by this kind of error.

[2/] Includes turpentine-tree, brushbox, and lanceleaf gum-myrtle.

Table 3.--Area of forest plantations by forest type, ownership class, and stand-size class, Island of Oahu, 1966

Stand-size class and forest type	Ownership class			All ownerships
	State	Other public	Private	
	Acres			
Commercial types:				
Sawtimber stands				
Robusta eucalyptus	388	329	880	1,597
Saligna eucalyptus	166	18	102	286
Blackbutt eucalyptus	60	4	119	183
Gray ironbark eucalyptus	46	--	49	95
Other eucalypts[1/]	256	186	490	932
Brushbox	160	58	99	317
Silk-oak	46	4	750	800
Other hardwoods	48	30	14	92
Conifers	95	4	40	139
Total	1,265	633	2,543	4,441
Poletimber stands				
Robusta eucalyptus	--	51	9	60
Gray ironbark eucalyptus	23	--	16	39
Other eucalypts[1/]	6	--	10	16
Brushbox	21	4	15	40
Silk-oak	24	--	67	91
Other hardwoods	2	6	3	11
Total	76	61	120	257
Seedling and sapling stands				
Robusta eucalyptus	--	--	3	3
Saligna eucalyptus	42	--	--	42
Other eucalypts[1/]	--	--	2	2
Brushbox	3	--	--	3
Other hardwoods	15	--	16	31
Conifers	46	--	10	56
Total	106	--	31	137
Total commercial	1,447	694	2,694	4,835
Noncommercial types:				
Eucalyptus spp.	14	--	51	65
Ironwood	164	261	798	1,223
Paper-bark	232	174	406	812
Other hardwoods	24	10	--	34
Conifers	--	--	5	5
Total noncommercial	434	445	1,260	2,139
Total forest plantation	1,881	1,139	3,954	6,974

1/ Includes turpentine-tree and lanceleaf gum-myrtle.

Table 4.--Area of forest plantations by forest type and period planted, Island of Oahu, 1966

Forest type	Period of planting							Total
	1896-1905	1906-1915	1916-1925	1926-1935	1936-1945	1946-1955	1956-1966	
	Acres							
Commercial types:								
Robusta eucalyptus	--	8	128	896	574	51	3	1,660
Saligna eucalyptus	--	--	23	34	229	--	42	328
Blackbutt eucalyptus	--	--	--	76	107	--	--	183
Gray ironbark eucalyptus	--	4	--	33	97	--	--	134
Other eucalypts[1/]	--	26	95	376	440	7	2	946
Brushbox	--	--	--	69	280	15	--	364
Silk-oak	--	--	--	25	864	2	--	891
Other hardwoods	7	--	8	39	38	11	50	153
Conifers	--	--	4	84	51	--	37	176
Total commercial	7	38	258	1,632	2,680	86	134	4,835
Noncommercial types:								
Ironwood	--	--	83	496	644	--	--	1,223
Paper-bark	--	--	--	198	614	--	--	812
Other hardwoods	--	--	--	9	25	--	--	34
Monterey cypress	--	--	--	5	--	--	--	5
Unidentified eucalypts	--	--	14	43	8	--	--	65
Total noncommercial	--	--	97	751	1,291	--	--	2,139
Total	7	38	355	2,383	3,971	86	134	6,974

1/ Includes turpentine-tree and lanceleaf gum-myrtle.

Table 5.--Volume of growing stock and sawtimber in planted sawtimber stands by stand-size class and species, Island of Oahu, 1966

Species	Stands 2 to 4 acres in size		Stands 5 acres and larger		All stands	
	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber
	Cu. ft.	Bd.ft.[1]/	Cu. ft.	Bd.ft.[1]/	Cu. ft.	Bd.ft.[1]/
	(in thousands of feet)					
Blackbutt eucalyptus	397	1,825	504	2,456	901	4,281
Bloodwood eucalyptus	--	--	5	27	5	27
Brushbox	212	526	378	1,109	590	1,635
Gray ironbark eucalyptus	98	266	262	792	360	1,058
Jhalna	--	--	13	29	13	29
Kinogum eucalyptus	--	--	3	8	3	8
Koa	--	--	13	59	13	59
Lanceleaf gum-myrtle	--	--	6	26	6	26
Lemon-gum eucalyptus	--	--	258	1,179	258	1,179
Marri eucalyptus	--	--	70	367	70	367
Molucca albizzia	--	--	64	272	64	272
Monkey-pod	--	--	22	120	22	120
Norfolk-Island-pine[2]/	118	516	425	1,986	543	2,502
Ohia	--	--	1	3	1	3
Other hardwoods[3]/	124	459	--	--	124	459
Red-ironbark eucalyptus	--	--	7	26	7	26
Robusta eucalyptus	900	4,076	3,650	15,483	4,550	19,559
Saligna eucalyptus	265	1,368	1,484	7,991	1,749	9,359
Silk-oak	77	180	976	2,356	1,053	2,536
Tallowwood eucalyptus	--	--	22	101	22	101
Tropical ash	--	--	13	23	13	23
Turpentine-tree	--	--	67	235	67	235
Unidentified eucalypts	248	990	236	972	484	1,962
Total	2,439	10,206	8,479	35,620	10,918	45,826

1/ International 1/4-inch rule.

2/ Mainly Norfolk-Island-pine, but includes sugi and Australian kauri.

3/ Australian toon, camphor-tree, mango, West Indies mahogany.

Table 6.--Volume of growing stock and sawtimber in planted sawtimber stands 5 acres and larger, by ownership class[1/] and species, Island of Oahu, 1966

Species	State		Other public		Private		Total	
	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber
	Cu. ft.	Bd.ft.[2/]	Cu. ft.	Bd.ft.[2/]	Cu. ft.	Bd.ft.[2/]	Cu. ft.	Bd.ft.[2/]
	(in thousands of feet)							
Robusta eucalyptus	1,424	6,614	757	3,242	1,469	5,627	3,650	15,483
Saligna eucalyptus	938	5,166	133	722	413	2,103	1,484	7,991
Blackbutt eucalyptus	139	739	13	51	352	1,666	504	2,456
Gray ironbark eucalyptus	56	198	59	206	147	388	262	792
Other eucalypts[3/]	235	1,106	108	394	330	1,440	673	2,940
Brushbox	241	674	34	82	103	353	378	1,109
Silk-oak	40	131	--	--	936	2,225	976	2,356
Other hardwoods[4/]	62	235	59	256	6	16	127	507
Norfolk-Island-pine	360	1,694	--	--	65	292	425	1,986
Total	3,495	16,557	1,163	4,953	3,821	14,110	8,479	35,620

1/ See footnote 1, table 2.
2/ International 1/4-inch rule.
3/ Mainly Eucalyptus spp. but includes turpentine-tree.
4/ Jhalna, koa, lanceleaf gum-myrtle, Molucca albizzia, monkey-pod, ohia, and tropical ash.

Table 7.--Volume of growing stock and sawtimber in planted sawtimber stands 2 to 4 acres in size, by ownership class[1/] and species, Island of Oahu, 1966

Species	State		Other public		Private		Total	
	Growing stock	Saw-timber	Growing stock	Saw-timber	Growing stock	Saw-timber	Growing stock	Saw-timber
	Cu. ft.	Bd.ft.[2/]	Cu. ft.	Bd.ft.[2/]	Cu. ft.	Bd.ft.[2/]	Cu. ft.	Bd.ft.[2/]
	(in thousands of feet)							
Robusta eucalyptus	270	1,250	68	297	562	2,529	900	4,076
Saligna eucalyptus	154	821	9	38	102	509	265	1,368
Blackbutt eucalyptus	152	737	20	101	225	987	397	1,825
Gray ironbark eucalyptus	48	151	17	37	33	78	98	266
Other eucalypts[3/]	127	527	27	108	94	355	248	990
Brushbox	86	217	37	63	89	246	212	526
Silk-oak	7	13	5	8	65	159	77	180
Other hardwoods[4/]	61	223	40	157	23	79	124	459
Conifers[5/]	64	328	6	7	48	181	118	516
Total	969	4,267	229	816	1,241	5,123	2,439	10,206

1/ See footnote 1, table 2.
2/ International 1/4-inch rule.
3/ Mainly Eucalyptus spp. but includes turpentine-tree.
4/ Australian toon, jhalna, koa, lanceleaf gum-myrtle, mango, Molucca albizzia, monkey-pod, ohia, tropical ash, and West Indies mahogany.
5/ Mainly Norfolk-Island-pine, but includes some sugi and Australian kauri.

Table 8.--Volume of sawtimber and growing stock in planted sawtimber stands 5 acres and larger by species and diameter class, Island of Oahu, 1966

Species	All classes	Tree diameter class (inches at breast height)							
		5.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0-38.9	39.0 plus
		Sawtimber in thousand board feet[1/]							
Robusta eucalyptus	15,483	--	1,362	2,044	2,809	2,464	6,263	521	20
Saligna eucalyptus	7,991	--	214	760	1,262	1,512	4,121	113	9
Blackbutt eucalyptus	2,456	--	83	235	352	486	1,230	70	--
Gray ironbark eucalyptus	792	--	193	245	168	123	63	--	--
Other eucalypts[2/]	2,940	--	225	363	350	564	1,188	166	84
Brushbox	1,109	--	296	401	236	130	46	--	--
Silk-oak	2,356	--	998	702	361	227	59	9	--
Other hardwoods[3/]	507	--	55	90	57	96	141	65	3
Norfolk-Island-pine	1,986	--	159	387	574	626	240	--	--
Total	35,620	--	3,585	5,227	6,169	6,228	13,351	944	116
		Growing stock in thousand cubic feet							
Robusta eucalyptus	3,560	385	532	514	566	461	1,103	86	3
Saligna eucalyptus	1,484	46	81	182	239	260	657	18	.1
Blackbutt eucalyptus	504	9	32	62	74	94	221	12	--
Gray ironbark eucalyptus	262	87	61	52	30	21	11	--	--
Other eucalypts[2/]	673	74	84	91	71	107	203	29	14
Brushbox	378	124	91	85	46	23	9	--	--
Silk-oak	976	413	290	150	70	40	12	1	--
Other hardwoods[3/]	127	23	17	21	12	18	25	11	--
Norfolk-Island-pine	425	44	51	79	103	108	40	--	--
Total	8,479	1,205	1,239	1,236	1,211	1,132	2,281	157	18

1/ International 1/4-inch rule.
2/ Mainly Eucalyptus spp. but includes turpentine-tree.
3/ Jhalna, koa, lanceleaf gum-myrtle, Molucca albizzia, monkey-pod, ohia, and tropical ash.

Table 9.--Volume of cull trees in planted sawtimber stands, 5 acres and larger, by forest reserve and species, Island of Oahu, 1966

Forest reserve	Species									Total all species
	Robusta eucalyptus	Saligna eucalyptus	Blackbutt eucalyptus	Other eucalypts 1/	Brush-box	Silk-oak	Other hard-woods 2/	Norfolk-Island-pine	Noncom-mercial species 3/	
	Thousand cubic feet									
Ewa	59	8	4	12	4	--	8	--	24	119
Hauula	--	--	--	--	--	--	--	1	2	3
Honolulu	8	--	--	5	--	--	3	1	50	67
Honouliuli	49	2	1	14	2	83	6	--	140	297
Kahuku	--	--	--	--	1	--	--	--	--	1
Kaneohe	2	--	--	--	2	--	--	--	--	4
Kawailoa	--	--	3	--	--	--	--	--	--	3
Kuliouou	--	--	--	--	--	--	--	--	--	--
Makua-Keeau	--	--	--	--	--	--	--	--	--	--
Mokuleia	--	1	--	--	--	--	--	--	--	1
Nanakuli	--	--	--	--	--	2	--	--	2	4
Pupukea	7	--	--	--	2	1	2	--	16	28
Schofield Barracks	--	--	--	--	--	--	--	--	--	--
Waiahole	--	--	--	--	--	--	--	2	--	2
Waianae-Kai	5	--	--	5	--	--	--	--	5	15
Waimanalo	1	--	--	--	--	--	--	--	2	3
Outside Reserve	75	1	--	3	4	--	1	--	14	98
Total	206	12	8	39	15	86	20	4	255	645

1/ Mainly Eucalyptus spp. but includes turpentine-tree.

2/ Includes Australian toon, jhalna, koa, lanceleaf gum-myrtle, mango, monkey-pod, ohia, tropical ash, and West Indies mahogany.

3/ Includes black-wattle acacia, bluegum eucalyptus, cinnamon, cypress, ironwoods, Java-plum, kopiko, kukui, lama, loulu, melochia, opiuma, papala-kepau, paper-bark, pride-of-India, unidentified eucalypts, sandalwood, and wiliwili.

Table 10.--Sawtimber volume in planted sawtimber stands 5 acres and larger by ownership class, species, and log grade[1/] Island of Oahu, 1966

Ownership class and species	All grades	Factory lumber logs			Tie and timber logs	Softwood species[2/]
		Grade 1	Grade 2	Grade 3	Grade 4	
	Thousand board feet[3/]					
State:						
Robusta eucalyptus	6,614	896	479	1,281	3,958	--
Saligna eucalyptus	5,166	1,205	670	1,093	2,198	--
Blackbutt eucalyptus	739	110	121	195	313	--
Gray ironbark eucalyptus	198	14	25	61	98	--
Other eucalypts[4/]	1,106	229	119	265	493	--
Brushbox	674	--	--	129	545	--
Silk-oak	131	2	12	41	76	--
Other hardwoods[5/]	235	52	31	38	114	--
Norfolk-Island-pine	1,694	--	--	--	--	1,694
Total	16,557	2,508	1,457	3,103	7,795	1,694
Other public:						
Robusta eucalyptus	3,242	330	269	516	2,127	--
Saligna eucalyptus	722	99	119	205	299	--
Blackbutt eucalyptus	51	--	2	9	40	--
Gray ironbark eucalyptus	206	--	18	38	150	--
Other eucalypts[4/]	394	31	17	66	280	--
Brushbox	82	--	--	--	82	--
Other hardwoods[5/]	256	21	45	34	156	--
Total	4,953	481	470	868	3,134	--
Private:						
Robusta eucalyptus	5,627	825	440	838	3,524	--
Saligna eucalyptus	2,103	230	383	483	1,007	--
Blackbutt eucalyptus	1,666	116	147	386	1,017	--
Gray ironbark eucalyptus	388	17	15	93	263	--
Other eucalypts[4/]	1,440	348	156	289	647	--
Brushbox	353	20	15	110	208	--
Silk-oak	2,225	--	21	301	1,903	--
Other hardwoods[5/]	16	--	--	7	9	--
Norfolk-Island-pine	292	--	--	--	--	292
Total	14,110	1,556	1,177	2,507	8,578	292
All ownerships:						
Robusta eucalyptus	15,483	2,051	1,188	2,635	9,609	--
Saligna eucalyptus	7,991	1,534	1,172	1,781	3,504	--
Blackbutt eucalyptus	2,456	226	270	590	1,370	--
Gray ironbark eucalyptus	792	31	58	192	511	--
Other eucalypts[4/]	2,940	608	292	620	1,420	--
Brushbox	1,109	20	15	239	835	--
Silk-oak	2,356	2	33	342	1,979	--
Other hardwoods[5/]	507	73	76	79	279	--
Norfolk-Island-pine	1,986	--	--	--	--	1,986
Total	35,620	4,545	3,104	6,478	19,507	1,986

1/ Based on standard specifications for hardwood log grades for standard lumber.
2/ Commercial conifer species were not log graded.
3/ International 1/4-inch rule.
4/ Mainly Eucalyptus spp. but includes turpentine-tree.
5/ Jhalna, koa, lanceleaf gum-myrtle, Molucca albizzia, monkey-pod, ohia, and tropical ash.

Table 11.--Listing of individual stands and plantings with species type, ownership, area, and volume
Island of Oahu, 1966

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
1/ 3001				
3002	Gray ironbark eucalyptus	State	2	3
3003	Mixed eucalypts	Private	34	641
3004	Silk-oak	Private	8	49
3005	Ironwood	State	11	(2/)
3006	Mixed eucalypts	State	24	232
3007	Mixed eucalypts	State	34	447
3008	Bluegum eucalyptus	State	2	(2/)
3009	Kinogum eucalyptus	State	3	25
3010	Lemon-gum eucalyptus	State	5	67
3011	Robusta eucalyptus	State	2	5
3012	Saligna eucalyptus	State	20	403
3013	Saligna eucalyptus	State	3	60
3014	Mixed eucalypts	State	2	40
3015	Mixed eucalypts	State	2	40
3016	Mixed eucalypts	State	4	6
3017	Robusta eucalyptus	Private	3	1
3018	Paper-bark	Private	9	(2/)
3019	Gray ironbark eucalyptus	Private	2	(3/)
3020	Gray ironbark eucalyptus	Private	18	28
3021	Mixed eucalypts	Private	22	25
3022	Gray ironbark eucalyptus	Private	8	(3/)
3023	Bluegum eucalyptus	Private	8	(2/)
3024	Gray ironbark eucalyptus	Private	4	6
3025	Silk-oak	Private	2	(3/)
3026	Lemon-gum eucalyptus	Private	7	58
3027	Mixed eucalypts	Private	79	61
3028	Robusta eucalyptus	Private	80	200
3029	Mixed eucalypts	Other public	36	67
3030	Norfolk-Island-pine	Other public	2	3

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3031	Norfolk-Island-pine	Other public	2	3
3032	Robusta eucalyptus	Other public	3	52
3033	Paper-bark	Private	7	(2/)
3034	Paper-bark	Private	2	(2/)
3035	Eucalyptus spp.	Private	3	24
3036	Silk-oak	Private	36	(3/)
3037	Robusta eucalyptus	Private	2	16
3038	Roble	State	2	(2/)
3039	Brushbox	State	3	20
3040	Eucalyptus spp.	Private	3	10
3041	Robusta eucalyptus	Private	4	32
3042	Silk-oak	Private	3	18
3043	Brushbox	Private	2	3
3044	Silk-oak	Private	2	11
3045	Eucalyptus spp.	Private	3	6
3046	Saligna eucalyptus	Private	3	14
3047	Mixed eucalypts	Private	68	149
3048	Robusta eucalyptus	Private	26	100
3049	Robusta eucalyptus	Private	63	511
3050	Mixed eucalypts	Private	14	13
3051	Robusta eucalyptus	State	2	17
3052	Eucalyptus spp.	Private	4	37
3053	Silk-oak	Private	5	19
3054	Silk-oak	Private	50	169
3055	Silk-oak	Private	17	52
3056	Lemon-gum eucalyptus	Private	4	(3/)
3057	Lemon-gum eucalyptus	Private	2	7
3058	Silk-oak	Private	5	12
3059	Lemon-gum eucalyptus	Private	19	64
3060	Silk-oak	Private	18	39

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3061	Silk-oak	Private	4	22
3062	Bluegum eucalyptus	State	2	(2/)
3063	Mixed eucalypts	Private	8	16
3064	Mixed eucalypts	Private	4	58
3065	Silk-oak	Private	7	121
3066	Silk-oak	Private	32	176
3067	Ironwood	Private	30	(2/)
3068	Robusta eucalyptus	State	2	2
3069	Robusta eucalyptus	Private	4	32
3070	Mixed eucalypts	State	2	26
3071	Robusta eucalyptus	Private	22	185
3072	Silk-oak	Private	4	16
3073	Silk-oak	Private	2	3
3074	Silk-oak	Private	4	14
3075	Paper-bark	State	26	(2/)
3076	Ironwood	Private	5	(2/)
3077	Silk-oak	Private	19	10
3078	Silk-oak	Private	171	257
3079	Robusta eucalyptus	Private	4	15
3080	Paper-bark	Private	5	(2/)
3081	Paper-bark	Private	4	(2/)
3082	Sugi	Private	4	17
3083	Gray ironbark eucalyptus	State	11	90
3084	Silk-oak	State	11	21
3085	Silk-oak	State	16	32
3086	Silk-oak	State	8	6
3087	Silk-oak	State	3	2
3088	Tropical ash	Private	5	4
3089	Saligna eucalyptus	Private	2	9
3090	Mixed eucalypts	Private	4	18

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3091	Robusta eucalyptus	Private	3	14
3092	Silk-oak	Private	5	12
3093	Silk-oak	Private	6	3
3094	Mixed eucalypts	Private	10	46
3095	Tropical ash	Private	3	(3/)
3096	Silk-oak	Private	16	14
3097	Robusta eucalyptus	Private	4	18
3098	Turpentine-tree	Private	4	37
3099	Gray ironbark eucalyptus	Private	5	30
3100	Turpentine-tree	Private	17	159
3101	Silk-oak	Private	40	62
3102	Silk-oak	Private	11	41
3103	Silk-oak	Private	15	1
3104	Silk-oak	Private	53	81
3105	Paper-bark	Private	22	(2/)
3106	Brushbox	Private	7	47
3107	Silk-oak	Private	10	105
3108	Silk-oak	Private	2	3
3109	Robusta eucalyptus	Private	14	204
3110	Mixed eucalypts	Private	8	129
3111	Blackbutt eucalyptus	Private	8	126
3112	Brushbox	Private	13	207
3113	Brushbox	Private	2	(3/)
3114	Silk-oak	Private	6	9
3115	Robusta eucalyptus	Private	3	44
3116	Silk-oak	Private	22	15
3117	Robusta eucalyptus	State	6	286
3118	Silk-oak	Private	30	336
3119	Blackbutt eucalyptus	Private	18	218
3120	Silk-oak	Private	85	405

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3121	Silk-oak	Private	60	125
3122	Robusta eucalyptus	State	27	492
3123	Robusta eucalyptus	Private	31	273
3124	Silk-oak	Private	4	(3/)
3125	Silk-oak	Private	9	(3/)
3126	Silk-oak	Private	3	6
3127	Robusta eucalyptus	Private	16	84
3128	Robusta eucalyptus	Private	17	84
3129	Saligna eucalyptus	Private	4	18
3130	Paper-bark	Private	44	(2/)
3131	Brushbox	Private	4	64
1/ 3132				
3133	Mixed eucalypts	Private	19	371
3134	Mixed eucalypts	Other public 4/	19	157
3135	Saligna eucalyptus	Private	4	111
3136	Saligna eucalyptus	Private	4	111
3137	Silk-oak	Private	2	4
3138	Paper-bark	Other public	5	(2/)
3139	Silk-oak	Other public	4	8
3140	Brushbox	Other public	19	58
3141	Tropical ash	Other public	6	(3/)
3142	Brushbox	Other public	3	9
3143	Molucca albizzia	Other public	3	47
3144	Paper-bark	Other public	40	(2/)
3145	Ironwood	Other public	30	(2/)
3146	Robusta eucalyptus	Other public	20	112
3147	Mixed eucalypts	Other public	4	33
3148	Mixed eucalypts	Other public	4	33
3149	Robusta eucalyptus	Other public	3	17
3150	Brushbox	Other public	2	6

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3151	Robusta eucalyptus	Other public	3	21
3152	Molucca albizzia	Other public	15	234
3153	Robusta eucalyptus	Other public	12	60
3154	Robusta eucalyptus	Other public	38	145
3155	Robusta eucalyptus	Other public	6	59
3156	Robusta eucalyptus	Other public	6	43
3157	Robusta eucalyptus	Other public	7	49
3158	Lemon-gum eucalyptus	Private	3	40
3159	Silk-oak	Private	2	4
3160	Mixed eucalypts	Private	13	6
3161	Mixed eucalypts	Private	4	14
3162	Bluegum eucalyptus	Private	10	(2/)
3163	Mixed eucalypts	Other public	4	26
3164	Mixed eucalypts	Other public	3	20
3165	Mixed eucalypts	Other public	28	184
3166	Eucalyptus spp.	Other public	6	8
3167	Robusta eucalyptus	Other public	16	57
3168	Robusta eucalyptus	Private	3	112
3169	Robusta eucalyptus	Private	25	932
3170	Robusta eucalyptus	Private	10	289
3171	Robusta eucalyptus	Private	8	42
1/3172				
3173	Robusta eucalyptus	Private	57	300
3174	Robusta eucalyptus	Private	10	78
3175	Robusta eucalyptus	State	16	302
3176	Ironwood	Private	10	(2/)
3177	Ironwood	Private	6	(2/)
3178	Mixed eucalypts	Private	2	16
3179	Ironwood	Private	5	(2/)
3180	Ironwood	Private	4	(2/)

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3181	Ironwood	Private	26	(2/)
3182	Blackbutt eucalyptus	State	4	81
3183	Brushbox	State	4	10
3184	Robusta eucalyptus	Private	4	66
3185	Robusta eucalyptus	Private	4	66
3186	Robusta eucalyptus	State	2	33
3187	Brushbox	State	2	5
3188	Brushbox	State	4	10
3189	Paper-bark	State	2	(2/)
3190	Ironwood	Private	124	(2/)
3191	Paper-bark	State	45	(2/)
3192	Gray ironbark eucalyptus	Private	4	11
3193	Robusta eucalyptus	Private	3	8
3194	Robusta eucalyptus	Private	58	160
3195	Silk-oak	Private	4	8
3196	Robusta eucalyptus	Private	2	2
3197	Robusta eucalyptus	Private	3	2
3198	Robusta eucalyptus	Private	22	17
3199	Saligna eucalyptus	Private	14	83
3200	Mixed eucalypts	Other public	5	30
3201	Robusta eucalyptus	Other public	17	127
3202	Robusta eucalyptus	Other public	77	703
3203	Robusta eucalyptus	Other public	9	65
3204	Robusta eucalyptus	Other public	33	736
3205	Mixed eucalypts	Other public	14	200
3206	Robusta eucalyptus	Other public	3	27
3207	Bluegum eucalyptus	Private	7	(2/)
3208	Bluegum eucalyptus	Private	3	(2/)
3209	Robusta eucalyptus	Private	2	18
3210	Monterey cypress	Private	5	(2/)

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3211	Robusta eucalyptus	Private	3	49
3212	Bluegum eucalyptus	Private	3	(2/)
3213	Bluegum eucalyptus	Private	12	(2/)
3214	Mixed eucalypts	Private	13	191
3215	Robusta eucalyptus	Private	4	66
3216	Silk-oak	Private	4	42
3217	Ironwood	Private	7	(2/)
3218	Paper-bark	Private	3	(2/)
3219	Silk-oak	Private	3	5
3220	Brushbox	Private	4	12
3221	Brushbox	Private	4	12
3222	Brushbox	Private	3	7
3223	Blackbutt eucalyptus	Private	3	36
3224	Brushbox	Private	3	7
3225	Blackbutt eucalyptus	Private	4	48
3226	Paper-bark	Private	2	(2/)
3227	Blackbutt eucalyptus	Private	3	47
3228	Mixed eucalypts	State	29	603
3229	Mixed eucalypts	Private	16	326
3230	Brushbox	Private	3	48
3231	Gray ironbark eucalyptus	Private	3	6
3232	Paper-bark	Private	6	(2/)
3233	Paper-bark	Private	3	(2/)
3234	Paper-bark	Private	2	(2/)
3235	Paper-bark	Private	3	(2/)
3236	Gray ironbark eucalyptus	Private	4	7
3237	Mixed eucalypts	Private	2	7
3238	Saligna eucalyptus	Private	2	66
3239	Paper-bark	Private	7	(2/)
3240	Robusta eucalyptus	State	17	321

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3241	Robusta eucalyptus	Private	3	49
3242	Ironwood	Private	64	(2/)
3243	Robusta eucalyptus	Private	4	66
3244	Robusta eucalyptus	State	12	228
3245	Robusta eucalyptus	Private	2	38
3246	Robusta eucalyptus	State	33	543
3247	Ironwood	State	17	(2/)
3248	Brushbox	State	4	10
3249	Robusta eucalyptus	State	8	168
3250	Paper-bark	State	4	(2/)
3251	Blackbutt eucalyptus	State	2	41
3252	Brushbox	Private	2	5
3253	Blackbutt eucalyptus	Private	2	41
3254	Brushbox	Private	3	7
3255	Blackbutt eucalyptus	Private	2	41
3256	Paper-bark	State	3	(2/)
3257	Paper-bark	State	2	(2/)
3258	Paper-bark	State	2	(2/)
3259	Brushbox	Private	3	7
3260	Blackbutt eucalyptus	Private	8	45
3261	Silk-oak	Private	13	79
3262	Saligna eucalyptus	Private	11	363
3263	Tallowwood eucalyptus	State	4	65
3264	Robusta eucalyptus	State	11	178
3265	Brushbox	State	11	61
3266	Molucca albizzia	State	6	7
3267	Robusta eucalyptus	Private	2	6
3268	Robusta eucalyptus	Private	8	20
3269	Robusta eucalyptus	Private	4	10
3270	Ironwood	Private	7	(2/)

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3271	Robusta eucalyptus	Private	4	12
3272	Robusta eucalyptus	Private	32	93
3273	Ironwood	Private	20	(2/)
3274	Ironwood	Private	2	(2/)
3275	Robusta eucalyptus	Private	4	75
3276	Robusta eucalyptus	Private	4	75
3277	Robusta eucalyptus	Private	4	75
3278	Robusta eucalyptus	Private	12	225
3279	Robusta eucalyptus	Private	3	9
3280	Blackbutt eucalyptus	State	12	182
3281	Paper-bark	State	4	(2/)
3282	Brushbox	State	30	74
3283	Paper-bark	State	9	(2/)
3284	Blackbutt eucalyptus	Private	6	56
3285	Blackbutt eucalyptus	Private	4	61
3286	Robusta eucalyptus	Private	2	33
3287	Gray ironbark eucalyptus	Private	2	33
3288	Paper-bark	Private	2	(2/)
3289	Paper-bark	Private	63	(2/)
3290	Ironwood	Private	5	(2/)
3291	Ironwood	Private	103	(2/)
3292	Robusta eucalyptus	Private	3	52
3293	Eucalyptus spp.	Private	4	14
3294	Silk-oak	Private	5	(3/)
3295	Silk-oak	Private	3	2
3296	Silk-oak	Private	5	(3/)
3297	Lemon-gum eucalyptus	Private	2	56
3298	Lemon-gum eucalyptus	Private	6	169
3299	Robusta eucalyptus	Private	4	21
3300	Robusta eucalyptus	Private	21	132

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3301	Robusta eucalyptus	Private	8	139
3302	Robusta eucalyptus	Private	26	138
3303	Robusta eucalyptus	Private	53	748
3304	Robusta eucalyptus	State	51	847
3305	Robusta eucalyptus	State	13	310
3306	Saligna eucalyptus	Other public	18	438
3307	Robusta eucalyptus	Other public	4	69
3308	Paper-bark	Other public	10	(2/)
3309	Robusta eucalyptus	Other public	45	775
3310	Paper-bark	Other public	18	(2/)
3311	Paper-bark	Other public	7	(2/)
3312	Mixed eucalyptus	Private	8	164
3313	Paper-bark	Private	6	(2/)
3314	Robusta eucalyptus	Other public	9	(3/)
3315	Blackbutt eucalyptus	Other public	4	90
3316	Robusta eucalyptus	Other public	42	(3/)
3317	Robusta eucalyptus	Other public	4	90
3318	Robusta eucalyptus	Private	4	90
3319	Robusta eucalyptus	Private	12	270
3320	Robusta eucalyptus	State	8	337
3321	Mixed eucalypts	State	4	12
3322	Robusta eucalyptus	State	15	404
3323	Paper-bark	State	6	(2/)
3324	Molucca albizzia	State	5	37
3325	Turpentine-tree	State	4	37
3326	Robusta eucalyptus	State	14	378
3327	Paper-bark	State	10	(2/)
3328	Robusta eucalyptus	State	5	126
3329	Paper-bark	State	7	(2/)
3330	Ironwood	State	3	(2/)

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3331	Blackbutt eucalyptus	State	7	82
3332	Paper-bark	State	3	(2/)
3333	Robusta eucalyptus	State	2	54
3334	Paper-bark	State	9	(2/)
3335	Formosa koa	State	6	(2/)
3336	Ironwood	State	12	(2/)
3337	Paper-bark	State	2	(2/)
3338	Robusta eucalyptus	State	15	86
3339	Brushbox	State	7	67
3340	Lemon-gum eucalyptus	State	12	110
3341	Paper-bark	State	8	(2/)
3342	Mixed eucalyptus	State	4	20
3343	Jhalna	State	5	31
3344	Mixed eucalyptus	State	4	20
3345	Mixed eucalyptus	State	7	36
3346	Robusta eucalyptus	State	14	78
3347	Norfolk-Island-pine	State	13	373
3348	Robusta eucalyptus	State	4	28
3349	Jhalna	State	2	13
3350	Paper-bark	State	6	(2/)
3351	Fig	State	3	(2/)
3352	Robusta eucalyptus	Private	4	78
3353	Robusta eucalyptus	Private	3	58
3354	Robusta eucalyptus	Private	4	78
3355	Brushbox	State	4	(3/)
3356	Brushbox	State	7	96
3357	Robusta eucalyptus	State	5	68
3358	Paper-bark	Private	8	(2/)
3359	Robusta eucalyptus	State	4	169
3360	Robusta eucalyptus	State	4	169

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3361	Saligna eucalyptus	Private	45	961
3362	Robusta eucalyptus	State	18	174
3363	Robusta eucalyptus	Private	9	59
3364	Ironwood	Private	3	(2/)
3365	Paper-bark	Private	2	(2/)
3366	Mixed eucalyptus	State	9	7
3367	Mixed hardwoods	State	6	10
3368	Norfolk-Island-pine	Private	3	86
3369	Paper-bark	Private	6	(2/)
3370	Mixed eucalypts	Private	3	2
3371	Mixed eucalypts	Other public	47	425
3372	Paper-bark	Other public	24	(2/)
3373	Paper-bark	Other public	5	(2/)
3374	Brushbox	State	8	67
3375	Robusta eucalyptus	State	14	222
3376	Saligna eucalyptus	State	78	2,160
3377	Robusta eucalyptus	State	4	95
3378	Saligna eucalyptus	State	40	1,909
3379	Blackbutt eucalyptus	State	5	206
3380	Paper-bark	Private	62	(2/)
3381	Blackbutt eucalyptus	Private	4	81
3382	Blackbutt eucalyptus	Private	4	81
3383	Robusta eucalyptus	Private	17	83
3384	Eucalyptus spp.	Private	3	4
3385	Blackbutt eucalyptus	Private	3	61
3386	Blackbutt eucalyptus	Private	3	61
3387	Paper-bark	Private	6	(2/)
3388	Paper-bark	Private	11	(2/)
3389	Saligna eucalyptus	Private	4	83
3390	Saligna eucalyptus	Private	4	83

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3391	Ironwood	Private	13	(2/)
3392	Ironwood	Private	25	(2/)
3393	Norfolk-Island-pine	Private	4	4
3394	Paper-bark	Private	4	(2/)
3395	Norfolk-Island-pine	Private	2	2
3396	Ironwood	Private	13	(2/)
3397	Ironwood	Private	16	(2/)
3398	Ironwood	Private	16	(2/)
3399	Ironwood	Private	32	(2/)
3400	Robusta eucalyptus	Other public	8	156
3401	Paper-bark	Private	3	(2/)
3402	Paper-bark	Private	3	(2/)
3403	Paper-bark	Private	13	(2/)
3404	Norfolk-Island-pine	Private	3	3
3405	Ironwood	Private	2	(2/)
3406	Robusta eucalyptus	Private	8	(2/)
3407	Robusta eucalyptus	Private	3	39
3408	Paper-bark	Private	44	(2/)
3409	Robusta eucalyptus	Private	9	118
3410	Paper-bark	Private	3	(2/)
3411	Robusta eucalyptus	Private	11	35
3412	Robusta eucalyptus	Private	4	52
3413	Robusta eucalyptus	Private	4	52
3414	Mixed eucalypts	Private	4	13
3415	Robusta eucalyptus	Private	4	56
3416	Paper-bark	Private	3	(2/)
3417	Norfolk-Island-pine	Private	9	46
3418	Norfolk-Island-pine	Private	13	245
3419	Brushbox	Private	2	5
3420	Robusta eucalyptus	Private	9	32

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3421	Robusta eucalyptus	Private	4	14
3422	Ironwood	Private	2	(2/)
3423	Ironwood	Private	6	(2/)
3424	Robusta eucalyptus	Private	8	67
3425	Ironwood	Private	3	(2/)
3426	Ironwood	Private	2	(2/)
3427	Ironwood	Private	5	(2/)
3428	Robusta eucalyptus	Private	6	(3/)
3429	Ironwood	Other public	20	(2/)
3430	Bluegum eucalyptus	Private	8	(2/)
3431	Robusta eucalyptus	State	2	32
3432	Saligna eucalyptus	State	3	99
3433	Robusta eucalyptus	State	4	29
3434	Robusta eucalyptus	State	4	65
3435	Brushbox	State	3	29
3436	Robusta eucalyptus	State	4	65
3437	Ironwood	Private	9	(2/)
3438	Ironwood	Private	3	(2/)
3439	Paper-bark	Private	9	(2/)
3440	Mixed eucalypts	Private	3	69
3441	Saligna eucalyptus	Private	5	64
3442	Mixed eucalypts	Private	5	115
3443	Mixed eucalypts	State	2	46
3444	Mixed eucalypts	State	7	74
3445	Brushbox	State	11	86
3446	Brushbox	State	2	(3/)
3447	Silk-oak	Private	4	3
3448	Robusta eucalyptus	Private	3	44
3449	Silk-oak	Private	4	(3/)
3450	Robusta eucalyptus	Private	7	146

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3451	Ironwood	Private	4	(2/)
3452	Ironwood	Private	12	(2/)
3453	Ironwood	Private	3	(2/)
3454	Ironwood	Private	8	(2/)
3455	Norfolk-Island-pine	State	17	29
3456	Ironwood	State	2	(2/)
3457	Brushbox	State	3	(3/)
3458	Ironwood	State	3	(2/)
3459	Ironwood	State	16	(2/)
3460	Norfolk-Island-pine	State	11	11
3461	Turpentine-tree	State	3	(3/)
3462	Silk-oak	Private	2	(3/)
3463	Robusta eucalyptus	Other public	12	60
3464	Brushbox	Other public	5	4
3465	Paper-bark	Other public	23	(2/)
3466	Robusta eucalyptus	State	3	49
3467	Ironwood	Other public	55	(2/)
3468	Ironwood	Other public	7	(2/)
3469	Blackbutt eucalyptus	Private	3	70
3470	Blackbutt eucalyptus	Private	4	94
3471	Robusta eucalyptus	Private	3	15
3472	Brushbox	Private	4	38
3473	Robusta eucalyptus	Other public	3	11
3474	Blackbutt eucalyptus	Private	25	585
3475	Mixed eucalypts	Private	4	65
3476	Eucalyptus spp.	Private	2	32
3477	Jhalna	Private	2	13
3478	Eucalyptus spp.	Private	3	49
3479	Norfolk-Island-pine	State	25	967
3480	Norfolk-Island-pine	State	4	155

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3481	Australian kauri	State	4	21
3482	Blackbutt eucalyptus	State	3	70
3483	Robusta eucalyptus	Private	4	36
3484	Molucca albizzia	Private	4	5
3485	Molucca albizzia	Private	3	47
3486	Eucalyptus spp.	State	3	(3/)
3487	Eucalyptus spp.	Private	2	14
3488	Mixed eucalypts	Private	3	27
3489	Blackbutt eucalyptus	Private	4	81
3490	West Indies mahogany	State	2	4
3491	Silk-oak	State	3	6
3492	Ironwood	State	9	(2/)
3493	Saligna eucalyptus	State	4	111
3494	Blackbutt eucalyptus	State	4	165
3495	Ironwood	State	8	(2/)
3496	Robusta eucalyptus	State	2	11
3497	Australian toon	State	3	100
3498	Mixed eucalypts	State	5	44
3499	Mixed eucalypts	State	4	20
3500	Lemon-gum eucalyptus	State	3	126
3501	Gray ironbark eucalyptus	State	4	33
3502	Eucalyptus spp.	State	2	10
3503	Mixed eucalypts	State	4	39
3504	Ironwood	Private	25	(2/)
3505	Ironwood	State	13	(2/)
3506	Monkey-pod	State	7	120
3507	Mixed eucalypts	State	14	70
3508	Ironwood	State	2	(2/)
3509	Silk-oak	State	5	52
3510	Brushbox	State	4	31

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3511	Gray ironbark eucalyptus	State	8	(3/)
3512	Gray ironbark eucalyptus	State	8	(3/)
3513	Brushbox	Private	8	29
3514	Paper-bark	Private	8	(2/)
3515	Norfolk-Island-pine	Private	2	57
3516	Lemon-gum eucalyptus	Private	2	2
3517	Turpentine-tree	Private	4	2
3518	Turpentine-tree	Private	2	(3/)
3519	Brushbox	Private	2	(3/)
3520	Gray ironbark eucalyptus	Private	2	(3/)
3521	Brushbox	Private	2	(3/)
3522	Mixed eucalypts	State	9	250
3523	Norfolk-Island-pine	State	2	57
3524	Paper-bark	State	22	(2/)
3525	Paper-bark	State	5	(2/)
3526	Robusta eucalyptus	State	2	11
3527	Jhalna	State	2	(3/)
3528	Robusta eucalyptus	State	18	1,036
3529	Brushbox	State	20	34
3530	Blackbutt eucalyptus	State	14	157
3531	Turpentine-tree	State	5	65
3532	Brushbox	State	9	88
3533	Paper-bark	State	5	(2/)
3534	Brushbox	State	10	123
3535	Ironwood	State	7	(2/)
3536	Norfolk-Island-pine	State	14	303
3537	Ironwood	State	2	(2/)
3538	Turpentine-tree	State	4	37
3539	Ironwood	State	5	(2/)
3540	Brushbox	State	3	29

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3541	Paper-bark	State	2	(2/)
3542	Mixed eucalypts	Private	35	232
3543	Brushbox	Private	7	19
3544	Mixed eucalypts	State	4	27
3545	Mixed eucalypts	State	3	20
3546	Mixed eucalypts	Private	4	27
3547	Brushbox	Private	9	44
3548	Brushbox	Private	4	20
3549	Brushbox	Private	2	5
3550	Brushbox	State	4	11
3551	Gray ironbark eucalyptus	Private	6	21
3552	Silk-oak	State	2	(3/)
3553	Silk-oak	State	5	(3/)
3554	Silk-oak	State	3	(3/)
3555	Silk-oak	State	4	(3/)
3556	Silk-oak	State	7	(3/)
3557	Mixed eucalypts	State	3	3
3558	Mixed eucalypts	Private	3	1
3559	Saligna eucalyptus	State	2	40
3560	Tallowwood eucalyptus	State	2	40
3561	Gray ironbark eucalyptus	State	4	(3/)
3562	Gray ironbark eucalyptus	State	3	(3/)
3563	Mixed eucalypts	State	3	3
3564	Mixed eucalypts	Private	3	49
3565	Ironwood	Private	18	(2/)
3566	Brushbox	Private	3	17
3567	Robusta eucalyptus	State	6	18
3568	Gray ironbark eucalyptus	State	7	19
3569	Gray ironbark eucalyptus	State	9	24
3570	Ironwood	State	2	(2/)

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3571	Robusta eucalyptus	State	3	9
3572	Brushbox	State	12	(3/)
3573	Brushbox	State	3	15
3574	Mixed eucalypts	State	2	6
3575	Gray ironbark eucalyptus	State	3	11
3576	Brushbox	State	3	15
3577	Silk-oak	State	3	(3/)
3578	Gray ironbark eucalyptus	State	4	11
3579	Gray ironbark eucalyptus	State	6	23
3580	Ironwood	Private	2	(2/)
3581	Ironwood	Private	18	(2/)
3582	Ironwood	Private	5	(2/)
3583	Robusta eucalyptus	Private	4	66
3584	Ironwood	Private	3	(2/)
3585	Ironwood	Private	63	(2/)
3586	Ironwood	Private	15	(2/)
3587	Robusta eucalyptus	Private	3	56
3588	Ironwood	Private	3	(2/)
3589	Robusta eucalyptus	Private	3	56
3590	Robusta eucalyptus	Private	3	56
3591	Blackbutt eucalyptus	Private	4	81
3592	Robusta eucalyptus	Private	2	38
3953	Lemon-gum eucalyptus	State	3	10
3594	Paper-bark	State	3	(2/)
3595	Paper-bark	State	2	(2/)
3596	Blackbutt eucalyptus	Private	2	41
3597	Paper-bark	Private	6	(2/)
3598	Blackbutt eucalyptus	Private	3	61
3599	Paper-bark	Private	7	(2/)
3600	Mixed hardwoods	State	3	7

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3601	Saligna eucalyptus	State	4	111
3602	Saligna eucalyptus	State	3	83
3603	Paper-bark	Private	9	(2/)
3604	Brushbox	State	3	3
3605	Brushbox	Other public	2	2
3606	Mixed eucalypts	Other public	2	18
3607	Mixed eucalypts	Other public	4	36
3608	Paper-bark	State	4	(2/)
3609	Brushbox	Private	3	(3/)
3610	Paper-bark	Private	4	(2/)
3611	Blackbutt eucalyptus	Private	2	36
3612	Saligna eucalyptus	State	2	55
3613	Turpentine-tree	State	3	28
3614	Saligna eucalyptus	State	3	83
3615	Saligna eucalyptus	State	4	111
3616	Blackbutt eucalyptus	State	3	124
3617	Blackbutt eucalyptus	State	4	165
3618	Ironwood	Private	14	(2/)
3619	Ironwood	Private	6	(2/)
3620	Robusta eucalyptus	Private	4	39
3621	Robusta eucalyptus	Private	3	(3/)
3622	Robusta eucalyptus	Private	3	29
3623	Robusta eucalyptus	State	4	65
3624	Brushbox	State	3	3
3625	Eucalyptus spp.	State	4	65
3626	Robusta eucalyptus	Private	2	42
3627	Ironwood	State	13	(2/)
3628	Norfolk-Island-pine	State	2	3
3629	Mixed eucalypts	State	3	3
3630	Mixed eucalypts	State	4	24

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3631	Paper-bark	State	3	(2/)
3632	Brushbox	State	2	25
3633	Eucalyptus spp.	State	2	(2/)
3634	Paper-bark	State	3	(2/)
3635	Paper-bark	State	3	(2/)
3636	Paper-bark	State	4	(2/)
3637	Formosa koa	State	13	(2/)
3638	Ironwood	State	8	(2/)
3639	Robusta eucalyptus	State	3	75
3640	Robusta eucalyptus	State	3	81
3641	Turpentine-tree	State	2	19
3642	Brushbox	State	2	13
3643	Brushbox	Other public	4	7
3644	Brushbox	Other public	4	7
3665	Turpentine-tree	Other public	3	28
3646	Brushbox	Other public	3	5
3647	Brushbox	Other public	3	5
3648	Brushbox	Other public	3	5
3649	Paper-bark	Other public	8	(2/)
3650	Paper-bark	Other public	19	(2/)
3651	Ironwood	Other public	44	(2/)
3652	Formosa koa	Other public	7	(2/)
3653	Brushbox	Other public	4	7
3654	Brushbox	Other public	4	(3/)
3655	Eucalyptus spp.	Other public	3	5
3656	Brushbox	Other public	2	2
3657	Molucca albizzia	Other public	2	2
3658	Eucalyptus spp.	Other public	4	6
3659	Ironwood	Other public	9	(2/)
3660	Molucca albizzia	Other public	2	31

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3661	Jhalna	Other public	2	13
3662	Molucca albizzia	Other public	2	2
3663	Ironwood	Other public	96	(2/)
3664	Paper-bark	Other public	6	(2/)
3665	Paper-bark	Other public	4	(2/)
3666	Paper-bark	State	6	(2/)
3667	Paper-bark	State	4	(2/)
3668	Paper-bark	State	4	(2/)
3669	Paper-bark	State	9	(2/)
3670	Paper-bark	Other public	5	(2/)
3671	Formosa koa	Other public	3	(2/)
3672	Brushbox	Other public	4	7
3673	Eucalyptus spp.	Private	2	32
3674	Brushbox	Private	4	3
3675	Brushbox	Private	2	19
3676	Blackbutt eucalyptus	State	2	27
3677	Turpentine-tree	State	2	19
3678	Brushbox	Private	3	3
3679	Eucalyptus spp.	State	2	27
3680	Eucalyptus spp.	State	2	27
3681	Paper-bark	State	5	(2/)
3682	Molucca albizzia	State	2	31
3683	Molucca albizzia	Other public	4	63
3684	Norfolk-Island-pine	State	3	86
3685	Eucalyptus spp.	State	2	10
3686	Molucca albizzia	State	3	47
3687	Robusta eucalyptus	State	2	54
3688	Robusta eucalyptus	Private	4	12
3689	Robusta eucalyptus	Private	4	12
3690	Robusta eucalyptus	Private	3	9

See footnotes at end of Table.

Table 11, continued

FORESTS PLANTED BEFORE 1950

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
3691	Ironwood	Private	11	(2/)
3692	Ironwood	State	2	(2/)
3693	Ironwood	State	2	(2/)
3694	Mango	State	4	5
3695	Ironwood	State	27	(2/)
3696	Brushbox	Private	4	(3/)
3697	Gray ironbark eucalyptus	Private	4	(3/)
3698	Gray ironbark eucalyptus	Private	3	5
3699	Paper-bark	Private	2	(2/)
3700	Paper-bark	Private	3	(2/)
3701	Robusta eucalyptus	Private	2	6
3702	Ironwood	Private	8	(2/)
3703	Brushbox	Private	2	(3/)
3704	Mixed eucalypts	Private	4	12
3705	Ironwood	Private	12	(2/)
Total			6,837	45,826

See footnotes at end of Table.

Table 11, continued

AREAS REFORESTED 1950-66[5/]

Stand No.	Species type	Owner	Acres	Total stand volume
				Thousand board feet
	Kawailoa area:			
--	Eucalyptus spp.	Private	2	(3/)
--	Robusta eucalyptus[6/]	Private	3	(3/)
--	Mixed pines	Private	10	(3/)
--	Mixed hardwoods	Private	16	(3/)
	Total Kawailoa		31	--
	Mokuleia area:			
--	Saligna eucalyptus	State	8	(3/)
--	Norfolk-Island-pine	State	27	(3/)
--	Tropical ash	State	9	(3/)
--	Brushbox	State	3	(3/)
--	Mixed hardwoods	State	19	(3/)
	Total Mokuleia		66	--
	Honolulu area:			
--	Mixed hardwoods	State	6	(3/)
	Waianae-Kai area:			
--	Saligna eucalyptus	State	5	(3/)
	Kuaokala area:			
--	Saligna eucalyptus	State	29	(3/)
	Total		137	--
	Total forest plantations		6,974	45,826

1/ Stand numbers 3001, 3132, and 3172 not used.
2/ Noncommercial plantation type.
3/ Poletimber or seedling and sapling stands.
4/ In this table, refers to military or county and municipal lands.
5/ No stand numbers assigned.
6/ Natural regeneration.

Table 12.--Identity of individual plantation stands in the groups shown on the map "Forest Plantations on the Island of Oahu--1966"[1/]

Group stand No.	Individual stand No.	Group stand No.	Individual stand No.
1	3552-57	21	3275-78; 3580-90, 92
2	3012-13; 3559-60	22	3267-73
3	3002, 14-16; 3561-62	23	3182-83, 87-89, 91; 3250-59, 74, 7988; 3489; 3591, 95-99
4	3017; 3558	24	3220-25, 29, 31-35, 37-39
5	3005-11, 23, 51, 62, 68, 70; 3117	25	3210-15
6	3018-22, 24-28	26	3171, 73-74, 76-80
7	3029, 30	27	3207-9; 3483, 88
8	3031-32	28	3200-6, 97-98
9	3033-37, 40-45, 47-48, 50, 52, 54-61, 63-67, 69, 71-74, 77-79, 80-82; 3260-61	29	3192-99
10	3038-39, 83-87	30	3289-93
11	3004, 46, 76, 89-99; 3100-4, 29	31	3299; 3300-3, 12-13
12	3003, 88; 3105-16, 18-20; 3216-19, 26-27, 30, 36, 94-96; 3405, 47	32	3306-11, 15-19
13	3121, 23-28, 30-31; 3448-49, 62	33	3075; 3122, 75; 3228, 40; 3304-5, 25, 52-54, 68-90; 3400, 93-94; 3600-17
14	3133-58; 3474	34	3391-99; 3401-4
15	3160	35	3618-19
16	3159, 61-62	36	3361-65; 3406, 40-43
17	3163-69	37	3407-16
18	3170	38	3417-24
19	3181	39	3425-26
20	3184-86, 90; 3241-49; 3593-94	40	3262-66; 3338-40; 3427-39, 69-72, 74, 86; 3621-25

Table 12, continued

Group stand No.	Individual stand No.	Group stand No.	Individual stand No.
41	3444-46; 3510-12	56	3320-24, 26-29, 31-37, 41-46, 66-67; 3509, 23-27; 3685
42	3450-54; 3626		
43	3455-61; 3627		
44	3463-65, 67-68	57	3688
45	3479-82; 3628-32	58	3534; 3686-87
		59	3689-91
46	3484-85, 87	60	3513-21
47	3330; 3490-92, 95-99, 3500-8	61	3542-46, 49-50; 3694
48	3347; 3466; 3522; 3633-42	62	3695-99; 3700
49	3563-66, 75-78; 3673-75	63	3692-93
50	3529-30; 3643-72	64	3547-48, 51, 68-79
		65	3701-5
51	3355-58; 3676-78		
52	3359-60; 3679-81		
53	3535-41		
54	3528, 31-33, 3682-83		
55	3348-51; 3684		

1/ Unnumbered stands on the map are identified by symbols as follows:

KRP--Kuaokala reforestation planting, 1950-66; includes seedling, sapling, and poletimber.
HRP--Honolulu reforestation planting, 1950-66; includes seedling, sapling, and poletimber.
MRP--Mokuleia reforestation planting, 1950-66; includes seedling, sapling, and poletimber.
WRP--Waianae-Kai reforestation planting, 1950-66; includes seedling, sapling, and poletimber.
ORP--Opaeula reforestation planting, 1950-66; includes seedling, sapling, and poletimber.

GPO 976-713

Nelson, Robert E.; Wong, Wesley H.C., Jr.; and Wick, Herbert L.
1968. *Plantation timber on the Island of Oahu--1966.* Berkeley, Calif., Pacific SW. Forest & Range Exp. Sta. 52 pp., illus. (U.S. Forest Serv. Res. Bull. PSW-10)

This report summarizes the results of an inventory of timber in planted forests on the Island of Oahu. It provides information on (1) location and acreage of each planted stand, (2) species composition and age, (3) timber volume and quality, and (4) ownership. This information supplements that of the initial Forest Survey.

OXFORD: (969):228.7--05.

RETRIEVAL TERMS: Planted forests; surveys; stand composition; stand volume; forest ownership; Hawaii (Oahu).

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